ABSTRACT

INTRODUCTION

11% of the world's disease burden is caused by fractures and is predicted to be the major cause of death and disability in the future.[1]The combination of biphasic calcium phosphate (BCP) with platelet rich fibrin (PRF) is a therapeutic alternative and it improves the pre-existing grafting materials available. The study was conducted to prove the efficacy of PRF + BCP in fracture healing process. [1]

This study's aim was to compare the efficacy of platelet rich fibrin in combination with biphasic calcium phosphate in early callus formation.

MATERIALS AND METHODS

A total of 26 patients participated in this study. They were divided into two groups, Group A (Study group) patients with upper limb diaphyseal fractures underwent open reduction and internal fixation with application of PRF + BCP over the fracture site which was compared with a control group where the patients received only current standard of care. Post operatively fracture healing was assessed using X rays. X rays were taken every month and the time taken for appearance of callus in the X rays were considered to be the beginning of fracture healing process. If the healing does not occur till 5 months, it will be considered to be non-union.

RESULTS

76.9% of the patients who received PRF+BCP showed callus formation within the sixth week, whereas only 38.5% of the controls showed callus formation during their twelfth week. It was found to be statistically significant ($p<0.05$).

CONCLUSION

92.3% of the cases showed callus formation in a period of less than 8 weeks whereas 46.2% of the controls showed callus formation only during their 12^{th} week only. This shows that, PRF+BCP favours early callus formation and improves fracture healing process.

KEYWORDS

Biphasic calcium phosphate; Platelet rich fibrin; Callus formation; Fracture healing; Upper limb diaphyseal fractures.